

ABSTRACT

The present invention provides an optical functional circuit where a holographic wave propagation medium is applied and a circuit property is excellent such as small transmission loss and crosstalk. The optical functional circuit where a plurality of circuit elements are formed on a substrate includes the wave propagation medium for converting an optical path of a leakage light so that the leakage light that is not emitted from a predetermined output port of the circuit element is not coupled to a different circuit element. This wave propagation medium is constituted by an optical waveguide that is provided with a clad layer formed on the substrate and a core embedded in the clad layer, and a part of the optical waveguide is formed in accordance with a refractive index distribution which is multiple scattered.